Protect and Recover Eelgrass

The Challenge

Eelgrass beds are essential spawning areas and nurseries for herring, other forage fish, and salmon, and generate food consumed throughout the marine food web. The overall acreage of eelgrass beds in Puget Sound is a key indicator for ecosystem health, along with their spatial distribution throughout the areas where salmon, Dungeness crab, and other species migrate and grow. In 2006, there were approximately 50,000 acres of eelgrass beds in Puget Sound. Although the total acreage has been relatively stable for a few years, these eelgrass beds are concentrated into a few areas, and some regions of Puget Sound, such as Hood Canal, have experienced localized losses. Many other Puget Sound habitats have shrunk in size, diminished in quality, fragmented, and the processes that form and sustain them have been disrupted.

In the long-term, climate change is anticipated to lead to greater stress on eelgrass followed by decline. Hardened shorelines will be particularly problematic for eelgrass as sea-level rises. Population growth is also likely to increase stressors on eelgrass, but there is a greater potential for mitigation of these effects than for those of climate change.

Given the diversity of eelgrass stressors in Puget Sound, the preferred approach is to pursue multiple strategies concurrently that explicitly address improving information, protection, and restoration.

Relationship to Recovery Targets

The 2020 recovery target for eelgrass states that "eelgrass extent in 2020 is 120 percent of area measured in the 2000-2008 baseline period."

B6. Implement a coordinated strategy to achieve the 2020 eelgrass recovery target.

B6.1 Improve data and information to protect eelgrass in sensitive areas.

Ongoing Programs

Key Ongoing Program Activities

DNR carries out a variety of programs to support eelgrass protection and recovery, and will emphasize the following activities:

- Estimate the total area of eelgrass in Puget Sound annually and provide feedback on the effectiveness of efforts to protect and restore this critical habitat. This information will track progress toward the Partnership's target to increase eelgrass area by 20% by 2020. Annual sound-wide estimates will be produced within one year of sampling in order to assure that information is delivered in a timely manner to guide management actions.
- Synthesize and publish guidance based on the best available science describing key eelgrass stressors in Puget Sound.
- Convene partners in state and local government, Tribes, the federal agencies and non-governmental and business groups to develop a broad-based strategy to achieve the 2020 eelgrass recovery target.
- Through the habitat conservation measures of the Aquatic Lands Habitat Conservation Plan, condition aquatic use authorizations to ensure new or retrofitted over-water structures do not impact important habitats such as eelgrass and kelp beds.
- Research how other estuaries have recovered seagrasses and identify proprietary tools implemented in other successful eelgrass recovery efforts that can be deployed here to prevent further damage to or loss of eelgrass on state-owned aquatic lands.

Near-Term Actions

None; work in the near-term will focus on implementation of ongoing programs.

B6.2 Use a variety of mechanisms to advance priority eelgrass restoration projects.

Near-Term Actions

B6.2 NTA 1: DNR will identify and recommend sites that are suitable for eelgrass restoration in Puget Sound Sites will be selected using habitat suitability analysis, hydrodynamic modeling, and their resilience to stressors. This will include identification of sites on state-owned aquatic lands with a focus on areas with long-term protections already in place.

Performance measures: Maps defining potential eelgrass restoration sites; site evaluations; final recommendations – completed by Dec 2013 (done or not); state aquatic land work complete by January 2013.

Target View: Eelgrass

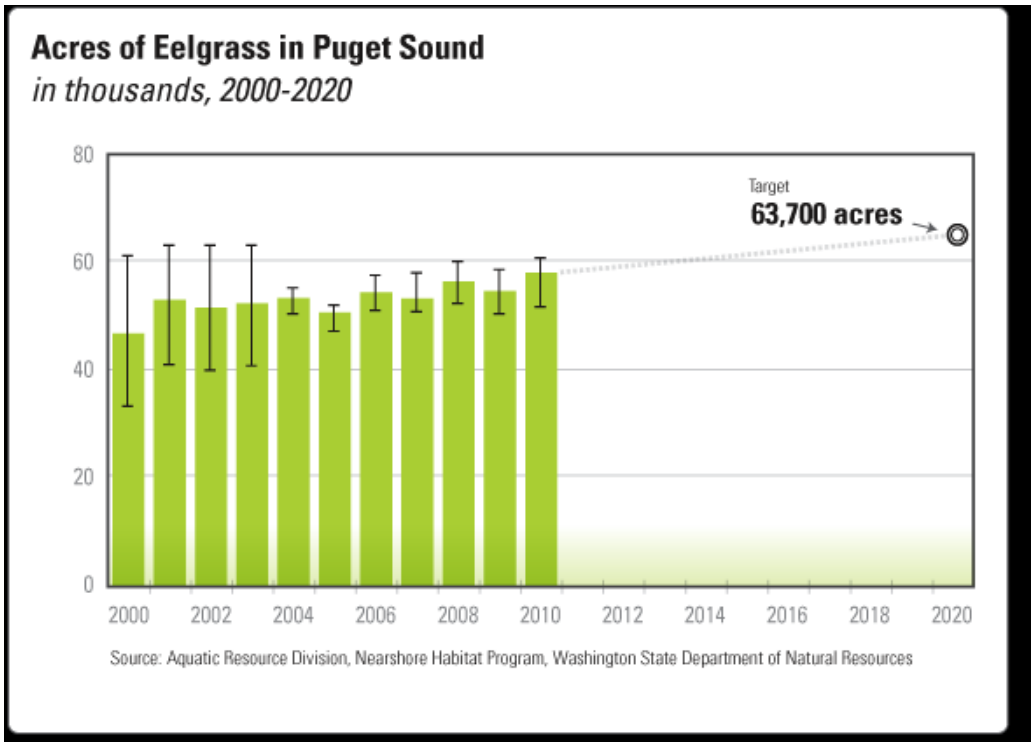
Eelgrass is a marine plant that grows in the shallow waters of Puget Sound. It flowers and produces seeds, unlike seaweed, and expands quickly in the spring and summer, only to slow its growth in the winter in response to lower water temperature and light. Eelgrass is important because it provides food and habitat for birds, fish, crabs, shellfish and other marine organisms. It also dampens wave energy thereby protecting shorelines from erosion and improves water quality.

Eelgrass and other seagrass species are used as indicators of estuarine health throughout the world because they respond sensitively to many natural and human-caused environmental factors that affect water quality and shoreline sediment. Changes in the abundance or distribution of this resource are likely to reflect changes in environmental conditions. They are also likely to affect many other species that depend on eelgrass habitat.

One way to improve Puget Sound is to increase the amount of eelgrass that grows in its waters. Though some larger Puget Sound eelgrass beds are stable or possibly increasing in size, many of the smaller more widely dispersed beds are in decline. Although research is underway, currently, the reason for this decline is not fully understood.

The 2020 recovery target for eelgrass is:

- to increase the acres of eelgrass in Puget Sound by 20 percent from the 2000 to 2008 baseline period - an increase from about 53,100 acres to about 63,700)



The black bars in the graph represent the margin of error for the estimated acreage, showing the uppermost and lowermost potential value for each year. In 2004, DNR modified its survey methodology and the precision of the estimates improved.

The two Action Agenda strategies most related to the eelgrass target are:

- Improve data and information to protect eelgrass in sensitive areas (B6.1)
- Use a variety of mechanisms to advance priority eelgrass restoration projects (B6.2)

Miradi target diagrams are still being developed for the eelgrass target.